UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: DEC 19 2019

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Mono Ceramics, Inc., Benton Harbor, Michigan

FROM: Gina Harrison, Environmental Scientist
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Mono Ceramics, Inc.

Facility Location: 2235 Pipestone Road, Benton Harbor, Michigan 49022
Date of Inspection: November 26, 2019

Lead Inspector(s):
1. Gina Harrison, Environmental Scientist

Other Attendees
1. Anil E. Gaikwad, Vice President Technology, Mono Ceramics, Inc.
2. Eric R. Nelson, Principal, Prism Science and Technology Environmental Services

Contact email address: anil.gaikwad@monoceramics.com

Purpose of Inspection: Determine compliance with the National Emission Standards for Hazardous Air Pollutants, Refractory Manufacturing (NESHAP Subpart SSSSS).

Facility Type: Refractory lance, foundry nozzle, and pre-cast metal shape production facility

Regulations Central to Inspection: NESHAP Subpart SSSSS.

Arrival Time: 9:02 AM EST
Departure Time: 11:25 AM EST

Inspection Type:

☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from Mr. Anil Gaikwad.

Company Ownership: The facility has been operating since the late 1980s and used to be part of a company named Clark Equipment, and later Monocon Group. Currently Mono Ceramics, Inc. (Mono Ceramics) is owned by IFGL Refractories, Ltd., a manufacturer of specialized refractories and operating systems for the steel industry. The facility employs 30 people and operates in five-day eight-hour shifts, with one shift per day.

Process Description:

Mono Ceramics operates a refractory lance and pre-cast shape manufacturing facility and primarily designs and creates refractory lances for blast furnaces and electric arc furnaces, and also makes skimmer blades, foundry nozzles, and tundish impact pads. The facility creates products using alumina-based raw materials and other additives, all of which are pH-neutral.

Mono Ceramics operates one production line with a continuous caster that rotates use of different core shapes depending on the product. In addition to the continuous caster the facility operates 2 kilns (Kilns B and C) and one mixer.

The general process flow is:

Raw materials >> mixer >> continuous caster (50-60 kg/min) >> kiln(s) >> steel fabrication >> inspection >> shipping

Staff Interview: According to Mr. Gaikwad, no clay is used at this facility. Raw materials include bauxite, tabular alumina, mullite, flint, kyanite, and other alumina blends. The facility makes about 72 skimmer blades per year, 1200 tundish impact pads per year, and 300-500 nozzles per year. At some point Mr. Gaikwad's predecessor looked at potential applicability of the NESHAP Subpart SSSSS and determined that it did not apply to the facility. Mr. Gaikwad also noted that a Notice of Compliance Status Report for NESHAP Subpart SSSSS may have been submitted, and that he would look for it.

Ms. Harrison asked if there have been any process changes since Mr. Gaikwad began employment at the facility, and Mr. Gaikwad noted that Kiln A is no longer operating, Kiln B is still operating per its original design with 16 burners, and Kiln C is brand new and operates with one 2.5 mmBtu/hour burner.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations: Mr. Gaikwad took Ms. Harrison and Mr. Nelson through the facility and pointed out the different areas, which were divided by function: raw material handling, caster area, core manufacturing/fabrication, kilns, and machining. In raw material handling, Ms. Harrison observed the mixer, which mixes each manually-weighed ingredient together before delivery to the caster.

Ms. Harrison observed Kiln C in operation and its datalogger monitor, which was displaying temperature over the drying period. Mr. Gaikwad led the group outside to observe the exhaust header that receives gas from Kilns B and C and exhausts directly to atmosphere.

Ms. Harrison also observed the plasma cutter and the machining area, which makes extensions and cores for use in the continuous caster.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

- Records were reviewed on site during the inspection. Ms. Harrison reviewed NESHAP Subpart SSSSS and asked questions regarding the use of certain raw materials listed in the NESHAP Subpart SSSSS.

CLOSING CONFERENCE

Ms. Harrison thanked Mr. Gaikwad and Mr. Nelson for their time and told them she would send a copy of the inspection report by email when it was completed. We confirmed that nothing we had discussed was Confidential Business Information. Ms. Harrison stated that EPA may potentially issue a Section 114 Information Request or follow up with questions via phone or email if further questions or concerns arise.

Requested documents: Ms. Harrison requested a copy of the Notification of Compliance Status Report for NESHAP Subpart SSSSS and supporting documents, including stack testing.

Compliance Assistance: General compliance assistance was provided by discussing requirements within the NESHAP Subpart SSSSS, the New Source Performance Standards for Nonmetallic Minerals at Subpart OOO (NSPS Subpart OOO), the Michigan SIP, and the facility's operating permit.

Concerns: Ms. Harrison explained one of the main purposes of the inspection was to evaluate compliance with NESHAP Subpart SSSSS, and also noted that she would review the facility's

use of kyanite and potentially follow up with questions to evaluate potential applicability of the NSPS Subpart OOO.

SIGNATURES

Report Author: _____ Date: 12/17/19

Section Chief: _____ Date: 12/19/19

APPENDICES AND ATTACHMENTS

Atttachment A: Photo and Video Log from November 26, 2019 Inspection of Mono Ceramics, Benton Harbor, MI.

Image Number	File Name	Date and Time (incl. time zone and DST)	Latitude and Longitude	Description of Image
1	IMG_20191126_100325.jpg	2019:11:26 10:03:25		caster 1
2	IMG_20191126_100330.jpg	2019:11:26 10:03:31		caster 2
3	IMG_20191126_100915.jpg	2019:11:26 10:09:16		Control panel for Kiln B
4	IMG_20191126_101521.jpg	2019:11:26 10:15:21		Photo of Kiln B stack
5	IMG_20191126_101543.jpg	2019:11:26 10:15:44		Photo of Kiln C stack
6	IMG_20191126_101717.jpg	2019:11:26 10:17:18		Photo of Kilns B and C and where Kiln A used to be

Attachment B: DVD with Photos and Videos from November 26, 2019 Inspection of Mono Ceramics, Benton Harbor, MI.